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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,537	09/12/2003	Yasuhisa Ehara	241986US3	5335
22850	7590	05/26/2006	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BLACKSHIRE, DAVID A	
			ART UNIT	PAPER NUMBER
			2852	

DATE MAILED: 05/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/660,537	<b>Applicant(s)</b> EHARA, YASUHISA	
	<b>Examiner</b> David A. Blackshire	<b>Art Unit</b> 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on September 12, 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>Feb. 5, 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### **Information Disclosure Statement**

1. The information disclosure statements filed February 5, 2004, August 31, 2004, and November 9 2005 fail to comply with 37 CFR 1.98(a)(1), which requires the following: (1) a list of all patents, publications, applications, or other information submitted for consideration by the Office; (2) U.S. patents and U.S. patent application publications listed in a section separately from citations of other documents; (3) the application number of the application in which the information disclosure statement is being submitted on each page of the list; (4) a column that provides a blank space next to each document to be considered, for the examiner's initials; and (5) a heading that clearly indicates that the list is an information disclosure statement. The information disclosure statement has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

The disclosure is objected to because of the following informalities: On page 6, line 6, the word scrapes is misspelled as "scraps" and in line 18, the singular "drum" should be the plural "drums". On page 13, lines 1 and 2, the transmissive gear is mislabeled as "33" when it should be labeled "32". On page 14, lines 3 through 7 are unclear and it is difficult to disseminate their intended meaning. In particular, the phrase "the regulative member 33... may be finished to employ the whole as the regulative surface though such the regulative member 33 elevates the cost," is of primary concern. Finally, on page 21, lines 14 and 15 are unclear. It is the belief of the examiner that these lines

should read, "... the gear 32 relative to the rotary shaft 20 can be suppressed as much as possible", instead of "as little as possible." Appropriate correction is required.

***Claim Objections***

1. Claim 11 objected to because of the following informalities: In line 22, the word project is misspelled as "projecte". Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 12, 13, 14, 29, 30, and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear whether the "portion" of claim 12 is the same as or distinct from the "portion" of claim 13. the same is true with respect to claims 29 and 30, respectively. It is also unclear which "portion is referred to by "the portion" in claim 14. The same may be said of claim 30.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 12, 13, 18, 29, and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Kitiyama (US 6661986).

6. Regarding claim 12, Kitiyama discloses a transmission according to claim 1, including a rotary shaft 41, a transmissive member 40 coupled with the rotary shaft 41 and secured to the rotary shaft 41, the transmissive member 40 having a first and second end, and a regulative member 32 secured to the rotary shaft 41 by press fitting and press-contacts the first end of the transmissive member 40 in such a manner that the transmissive member 40 is perpendicular to the rotary shaft 41. In addition, the outer circumference of the rotary shaft 41 fitted with the transmissive member 40 has a portion 41c, in the axial direction of the rotary shaft 41, that contacts and fits with an inner circumference of a central bore in the transmissive member 40.

7. Regarding claim 13, Kitiyama discloses a transmission according to claim 1, including a rotary shaft 41, a transmissive member 40 coupled with the rotary shaft 41 and secured to the rotary shaft 41, the transmissive member 40 having a first and second end, and a regulative member 32 secured to the rotary shaft 41 by press fitting and press-contacts the first end of the transmissive member 40 in such a manner that the transmissive member 40 is perpendicular to the rotary shaft 41. In addition, the outer circumference of the rotary shaft 41 has a portion 41c, located closer to the

Art Unit: 2852

regulative member 32, that contacts and fits with an inner circumference of a central bore in the transmissive member 40.

8. Regarding claim 29, Kitiyama discloses an image forming apparatus (see figs. 6 and 7) housing a transmission according to claim 18, including a rotary shaft 41, a transmissive member 40 coupled with the rotary shaft 41 and secured to the rotary shaft 41, the transmissive member 40 having a first and second end, and a regulative member 32 secured to the rotary shaft 41 by press fitting and press-contacts the first end of the transmissive member 40 in such a manner that the transmissive member 40 is perpendicular to the rotary shaft 41. In addition, the outer circumference of the rotary shaft 41 fitted with the transmissive member 40 has a portion 41c, in the axial direction of the rotary shaft 41, that contacts and fits with an inner circumference of a central bore in the transmissive member 40.

9. Regarding claim 30, Kitiyama discloses an image forming apparatus (see figs. 6 and 7) housing a transmission according to claim 18, including a rotary shaft 41, a transmissive member 40 coupled with the rotary shaft 41 and secured to the rotary shaft 41, the transmissive member 40 having a first and second end, and a regulative member 32 secured to the rotary shaft 41 by press fitting and press-contacts the first end of the transmissive member 40 in such a manner that the transmissive member 40 is perpendicular to the rotary shaft 41. In addition, the outer circumference of the rotary shaft 41 has a portion 41c, located closer to the regulative member 32, that contacts and fits with an inner circumference of a central bore in the transmissive member 40.

Art Unit: 2852

10. Claims 1, 2, 6, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Essl (US 2473417).

11. Regarding, claim 1 Essl discloses a transmission comprising: a rotary shaft (Fig 1), a transmissive member 19 coupled with the rotary shaft (Fig 1) and secured to the rotary shaft (Fig 1), the transmissive member 19 having a first and second end, and a regulative member 17 secured to the rotary shaft (Fig 1) by press fitting and press-contacts the first end of the transmissive member 19 in such a manner that the transmissive member 19 is perpendicular to the rotary shaft (Fig 1).

12. Regarding claim 2, Essl discloses a transmission according to claim 1 as described above, further comprising a screw 32 screwed in the rotary shaft (Fig 1), the screw having a head, the head applying pressure to the second end of the transmissive member 19 to press-contact the first end of the transmissive member 19 with the regulative member 17.

13. Regarding claim 6, Essl discloses a transmission according to claim 1 as described above, further comprising a relative rotation protector 20 that protects the transmissive member 19 from rotating relative to the regulative member 17.

14. Regarding claim 7, Essl discloses a transmission according to claim 6 as described above, wherein the relative rotation protector 20 comprises a stepped screw 20 that passes through the transmissive member 19 to the regulative member 17. The stepped screw that Essl describes is referred to as a bolt. By definition a bolt is a flat headed, partially threaded cylindrical fastener, commonly secured by a nut. A stepped

Art Unit: 2852

screw is a partially threaded cylindrical fastener. A bolt is a species of the genus stepped screw.

15. Regarding claim 8, Essl discloses a transmission according to claim 7, wherein the stepped screw 20 is inserted through the second end of the transmissive member 19 into the transmissive member 19, the stepped screw 20 having a threaded portion, and the head of the stepped screw is configured not to apply pressure on the second end of the transmissive member 19 directly or via a washer when the threaded portion of the stepped screw 20 is fastened to the regulative member 17. This function is inherent in a bolt used as a stepped screw.

16. Claims 1, 3, 4, 16, 17, 18, 20, 21, 33, 34, 35, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Hou et al. (US 3985432).

17. Regarding claim 3, Hou et al. disclose a transmission comprising a rotary shaft 76, a transmissive member 82 coupled with the rotary shaft 76 and secured to the rotary shaft 76, the transmissive member 82 having a first end and a second end, and a regulative member 88 secured to the rotary shaft 76 by press fitting and press-contacts the first end of the transmissive member 82 in such a manner that the transmissive member 82 is perpendicular to the rotary shaft 76. In addition, the regulative member 88 has a surface 86 opposing to the first end of the transmissive member 82, a part of the surface is formed as a regulative surface that press-contacts the first end of the transmissive member 82, a part other than the regulative surface of the surface of the regulative member 88 is formed as a no contacting surface that never contacts the transmissive member 82.



Art Unit: 2852

18. Regarding claim 4, Hou et al. disclose a transmission according to claim 3, as detailed above, wherein the regulative surface is located outward in the radial direction from the regulative member 88 relative to the no contacting surface (fig 4).

19. Regarding claim 16, Hou et al. disclose a transmission in accordance with claim 1 as described above, wherein a rotator 60 is secured around the rotary shaft 76 to rotate integrally with the rotary shaft 76, rotations of the transmissive member 82 being transmitted to the rotator 60.

20. Regarding claim 17, Hou et al. disclose a transmission in accord with claim 16, as detailed above, wherein the rotator 60 comprises a photosensitive drum.

21. Regarding claim 18, Hou et al. disclose an image forming apparatus (col. 4, line 23) comprising a transmission comprising a rotary shaft 76, a transmissive member 82 coupled with the rotary shaft 76 and secured to the rotary shaft 76, the transmissive member 82 having a first end and a second end, and a regulative member 88 secured to the rotary shaft 76 by press fitting and press-contacts the first end of the transmissive member 82 in such a manner that the transmissive member 82 is perpendicular to the rotary shaft 76.

22. Regarding claim 20, Hou et al. disclose an image forming apparatus (col. 4, line 23) according to claim 18, wherein the regulative member 88 has a surface 86 opposing to the first end of the transmissive member 82, a part of the surface is formed as a regulative surface that press-contacts the first end of the transmissive member 82, a part other than the regulative surface of the surface of the regulative member 88 is formed as a no contacting surface that never contacts the transmissive member 82.

23. Regarding claim 21, Hou et al. disclose an image forming apparatus (col. 4, line 23) according to claim 20 as detailed above, wherein the regulative surface is located outward in the radial direction from the regulative member 88 relative to the no contacting surface (fig 4).

24. Regarding claim 33, Hou et al. disclose an image forming apparatus according to claim 18 as described above, wherein a rotator 60 is secured around the rotary shaft 76 to rotate integrally with the rotary shaft 76, rotations of the transmissive member 82 being transmitted to the rotator 60.

25. Regarding claim 34, Hou et al. disclose an image forming apparatus according to claim 33, as detailed above, wherein the rotator 60 comprises a photosensitive drum.

26. Regarding claim 35, Hou et al. disclose a method of manufacturing a transmission that includes a rotary shaft 76; a transmissive member 82 coupled with the rotary shaft 76 and secured to the rotary shaft 76, the transmissive member 82 having a first end and a second end; and a regulative member 88 secured to the rotary shaft 76 by press fitting and press-contacts the first end of the transmissive member 82 in such a manner that the transmissive member 82 is perpendicular to the rotary shaft 76, the method comprising: finishing a surface of the regulative member 88, after securing the regulative member 88 to the rotary shaft 76 and before securing the transmissive member 82 to the rotary shaft 76, in such a manner that the surface press-contacts with the first end of the transmissive member 82 as the claimed method steps are inherent from the product structure discussed above.

Art Unit: 2852

27. Regarding claim 36, Hou et al. disclose the method according to claim 35, as detailed above, further comprising: finishing a portion of an outer circumference of the rotary shaft, after securing the regulative member 88 to the rotary shaft 76 and before securing the transmissive member 82 to the rotary shaft 76, in such a manner that that portion makes a contact with and fits into an inner circumference of a central bore in the transmissive member 82 as the claimed method steps are inherent from the product structure as shown above.

28. Regarding claim 37, Hou et al. disclose the method according to claim 35, as detailed above wherein the step of securing the regulative member 88 to the rotary shaft 76 includes press fitting the regulative member 88 with the rotary shaft 76, as the claimed method steps are inherent from the product structure as shown above.

29. Claims 1, 15, 18 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Kita (US 5210574).

30. Regarding claim 15, Kita discloses a transmission with regards to claim 1, comprising: a rotary shaft 8; a transmissive member 20 coupled with the rotary shaft 8 and secured to the rotary shaft 8, the transmissive member 20 having a first end and a second end; and a regulative member 170 secured to the rotary shaft 8 by press fitting and press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 8, wherein the regulative member 170 is finished (col. 13, lines 58-60) to form the regulative surface of the regulative member 170 press contacting with the first end of the transmissive

Art Unit: 2852

member 20, the regulative member 170 composed of a stainless steel (col. 13, lines 56-58).

31. Regarding claim 32, Kita discloses an image forming apparatus (col. 7, lines 29 and 30) including a transmission with regard to claim 18 comprising: a rotary shaft 8; a transmissive member 20 coupled with the rotary shaft 8 and secured to the rotary shaft 8, the transmissive member 20 having a first end and a second end; and a regulative member 170 secured to the rotary shaft 8 by press fitting and press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 8, wherein the regulative member 170 is finished (col. 13, lines 58-60) to form the regulative surface of the regulative member 170 press contacting with the first end of the transmissive member 20, the regulative member 170 composed of a stainless steel (col. 13, lines 56-58).

Claims 1 5, 9, 10, 11, 18,

22, 23, 26, 27, and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Himes et al. (US 6907205 B2)

32. Regarding claim 5, Himes et al disclose a transmission comprising a rotary shaft 30, a transmissive member 20 coupled with the rotary shaft 30 and secured to the rotary shaft 30, the transmissive member 20 having a first and a second end, and a regulative member 40 secured to the rotary shaft 30 by press fitting ad press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 30, wherein at least three portions in the circumferential

direction of the regulative member 40 are protruded outward in the circumferential direction from the regulative member 40 relative to other portions, the protruded portions 41 having surfaces opposite to the first end of the transmissive member 20, each of the surfaces is formed as a regulative surface that press contacts the first end of the transmissive member 20.

33. Regarding claim 9, Himes et al disclose a transmission comprising a rotary shaft 30, a transmissive member 20 coupled with the rotary shaft 30 and secured to the rotary shaft 30, the transmissive member 20 having a first and a second end, and a regulative member 40 secured to the rotary shaft 30 by press fitting and press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 30, further comprising, with respect to claim 6, a relative rotation protector (col 6, lines 55-67) that protects the transmissive member 20 from rotating relative to the regulative member 40, wherein the relative rotation protector comprises engagement protrusions (col. 6, lines 55-67) that protrude from the first end of the transmissive member 20 and are arranged to engage the regulative member 40.

34. Regarding claim 10, Himes et al. disclose the transmission according to claim 9, wherein at least three portions in the circumferential direction on the regulative member 40 are protruded outward in the circumferential direction from the regulative member 40 relative to other portions, the protruded portions 41 having surfaces opposing to the first end of the transmissive member 20, the surfaces each formed as a regulative surface that press contacts the first end of the transmissive member 20, and the transmissive member 20 further comprises a plurality of engagement protrusions (col. 6, lines 55-67)

Art Unit: 2852

arranged in the circumferential direction of the transmissive member 20, each engagement protrusion (col. 6, lines 55-67) positioned between the protruded portions 41 to engage the protruded portion 41, respectively.

35. Regarding claim 11, Himes et al. disclose the transmission according to claim 6, as discussed above, wherein the relative rotation protector 41 comprises projections that project from the regulative member 40 and fitted with engagement holes (col. 6, lines 55-67) formed in the transmissive member 20.

36. Regarding claim 22, Himes et al. disclose an image forming apparatus (col 4, lines 46-50) comprising a transmission that includes, with regard to claim 18, a rotary shaft 30, a transmissive member 20 coupled with the rotary shaft 30 and secured to the rotary shaft 30, the transmissive member 20 having a first and a second end, and a regulative member 40 secured to the rotary shaft 30 by press fitting and press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 30, wherein at least three portions in the circumferential direction of the regulative member 40 are protruded outward in the circumferential direction from the regulative member 40 relative to other portions, the protruded portions 41 having surfaces opposite to the first end of the transmissive member 20, each of the surfaces is formed as a regulative surface that press contacts the first end of the transmissive member 20..

37. Regarding claim 23, Himes et al. disclose an image forming apparatus (col. 4, lines 46-50) according to claim 18 as detailed above further comprising a relative

rotation protector 41 that protects the transmissive member 20 from rotating relative to the regulative member 40.

38. Regarding claim 26, Himes et al. disclose an image forming apparatus according to claim 23 as detailed above, wherein the relative rotation protector comprises engagement protrusions (col. 6, lines 55-67) that protrude from the first end of the transmissive member 20 and are arranged to engage the regulative member 40.

39. Regarding claim 27, Himes et al. disclose an image forming apparatus according to claim 26 as detailed above wherein at least three portions in the circumferential direction on the regulative member 40 are protruded outward in the circumferential direction from the regulative member 40 relative to other portions, the protruded portions 41 having surfaces opposing to the first end of the transmissive member 20, the surfaces each formed as a regulative surface that press contacts the first end of the transmissive member 20, and the transmissive member 20 further comprises a plurality of engagement protrusions (col. 6, lines 55-67) arranged in the circumferential direction of the transmissive member 20, each engagement protrusion (col. 6, lines 55-67) positioned between the protruded portions 41 to engage the protruded portion 41, respectively.

40. Regarding claim 28, Himes et al. disclose an image forming apparatus according to claim 23, as discussed above, wherein the relative rotation protector 41 comprises projections that project from the regulative member 40 and fitted with engagement holes (col. 6, lines 55-67) formed in the transmissive member 20.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

41. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

42. Claims 19, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kita (US5210574) in view of Essl (US 2473417).

43. Regarding claim 19, Kita discloses an image forming apparatus (col. 7, lines 29 and 30) including a transmission, regarding claim 18, comprising: a rotary shaft 8; a transmissive member 20 coupled with the rotary shaft 8 and secured to the rotary shaft 8, the transmissive member 20 having a first end and a second end; and a regulative member 170 secured to the rotary shaft 8 by press fitting and press-contacts the first end of the transmissive member 20 in such a manner that the transmissive member 20 is perpendicular to the rotary shaft 8. Kita differs from the instant invention by not showing a screw screwed in the rotary shaft, the screw having a head, the head or a



washer for the screw applying pressure to the second end of the transmissive member to press-contact the first end of the transmissive member with the regulative member.

44. However, Essl discloses a transmission including all of the above elements without specifically attaching them to an image forming apparatus, while not excluding such an application, including a screw 32 screwed in the rotary shaft, the screw having a head, the head or a washer for the screw applying pressure to the second end of the transmissive member to press-contact the first end of the transmissive member with the regulative member.

45. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming apparatus of Kita to include the aforementioned elements of Essl to garner a means to protect against a breakdown in perpendicularity between the transmissive member and the rotary shaft.

46. Regarding claim 24, Kita discloses an image forming apparatus (col. 7, lines 29 and 30) according to claim 18 as discussed above. Kita differs from the instant invention by not including a relative rotation protector that protects the transmissive member from rotating relative to the regulative member, wherein the relative rotation protector comprises a stepped screw that passes through the transmissive member and that is screwed in the regulative member.

47. However, Essl discloses a transmission including all of the above elements without specifically attaching them to an image forming , while not excluding such an application, including a relative rotation protector 20 that protects the transmissive member 19 from rotating relative to the regulative member 17, wherein the relative

Art Unit: 2852

rotation protector 20 comprises a stepped screw 20 that passes through the transmissive member 19 and that is screwed in the regulative member 17.

48. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming apparatus of Kita to include the aforementioned elements of Essl to garner a means to protect against a breakdown in the uniformity of rotation between the transmissive member and the regulative member.

49. Regarding claim 25, Kita discloses an image forming apparatus (col. 7, lines 29 and 30) according to claim 18 as discussed above. Kita differs from the instant invention by not including a relative rotation protector that protects the transmissive member from rotating relative to the regulative member, wherein the relative rotation protector comprises a stepped screw that passes through the transmissive member and that is screwed in the regulative member, wherein the stepped screw is inserted through the second end of the transmissive member into the transmissive member, the stepped screw having a threaded portion, and the head of the stepped screw is configured not to apply pressure on the second end of the transmissive member directly or via a washer when the threaded portion of the stepped screw is fastened to the regulative member.

50. However, Essl discloses a transmission including all of the above elements without specifically attaching them to an image forming apparatus, while not excluding such an application, including a relative rotation protector 20 that protects the transmissive member 19 from rotating relative to the regulative member 17, wherein the relative rotation protector 20 comprises a stepped screw 20 that passes through the transmissive member 19 and that is screwed in the regulative member 17, wherein the

Art Unit: 2852

stepped screw 20 is inserted through the second end of the transmissive member 19 into the transmissive member 19, the stepped screw 20 having a threaded portion, and the head of the stepped screw 20 is configured not to apply pressure on the second end of the transmissive member 19 directly or via a washer when the threaded portion of the stepped screw 20 is fastened to the regulative member 17. This function is inherent in a bolt used as a stepped screw.

51. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the image forming apparatus of Kita to include the aforementioned elements of Essl to ensure that the rotational velocity of the transmissive member was not made to vary significantly by applying undue pressure to the transmissive member thereby deforming its structure.

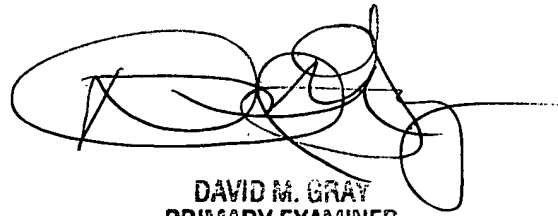
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Blackshire whose telephone number is (571) 272-1392. The examiner can normally be reached on 8:30 AM through 5:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Gray can be reached on (571) 272-2119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DAB



DAVID M. GRAY  
PRIMARY EXAMINER